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DEPARTMENT OF EDUCATION

34 CFR Chapter III

[Docket ID ED-2014-OSERS-0025]

Proposed priority--National Institute on Disability and  
Rehabilitation Research--Rehabilitation Engineering  
Research Centers

[CFDA Number: 84.133E-5.]

AGENCY: Office of Special Education and Rehabilitative  
Services, Department of Education.

ACTION: Proposed priority.

SUMMARY: The Assistant Secretary for Special Education and  
Rehabilitative Services proposes a priority for the  
Rehabilitation Engineering Research and Centers (RERC)  
Program administered by the National Institute on  
Disability and Rehabilitation Research (NIDRR).

Specifically, this notice proposes a priority for an RERC  
on Technologies to Enhance Independence in Daily Living for  
Adults with Cognitive Impairments. We take this action to  
focus research attention on an area of national need. We  
intend the priority to contribute to improved outcomes  
related to independence in daily activities in the home,

community, or workplace setting for adults with cognitive impairments.

DATES: We must receive your comments on or before [INSERT DATE 30 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

ADDRESSES: Submit your comments through the Federal eRulemaking Portal or via postal mail, commercial delivery, or hand delivery. We will not accept comments submitted by fax or by email or those submitted after the comment period. To ensure that we do not receive duplicate copies, please submit your comments only once. In addition, please include the Docket ID at the top of your comments.

- Federal eRulemaking Portal: Go to [www.regulations.gov](http://www.regulations.gov) to submit your comments electronically. Information on using Regulations.gov, including instructions for accessing agency documents, submitting comments, and viewing the docket, is available on the site under "Are you new to the site?"

- Postal Mail, Commercial Delivery, or Hand Delivery: If you mail or deliver your comments about these proposed regulations, address them to Patricia Barrett, U.S. Department of Education, 400 Maryland Avenue, SW., room

5142, Potomac Center Plaza (PCP), Washington, DC 20202-2700.

Privacy Note: The Department's policy is to make all comments received from members of the public available for public viewing in their entirety on the Federal eRulemaking Portal at [www.regulations.gov](http://www.regulations.gov). Therefore, commenters should be careful to include in their comments only information that they wish to make publicly available.

FOR FURTHER INFORMATION CONTACT: Patricia Barrett.

Telephone: (202) 245-6211 or by email:

[patricia.barrett@ed.gov](mailto:patricia.barrett@ed.gov).

If you use a telecommunications device for the deaf (TDD) or a text telephone (TTY), call the Federal Relay Service (FRS), toll free, at 1-800-877-8339.

SUPPLEMENTARY INFORMATION:

This notice of proposed priority is in concert with NIDRR's currently approved Long-Range Plan (Plan). The Plan, which was published in the Federal Register on April 4, 2013 (78 FR 20299), can be accessed on the Internet at the following site:

[www.ed.gov/about/offices/list/opers/nidrr/policy.html](http://www.ed.gov/about/offices/list/opers/nidrr/policy.html).

Through the implementation of the Plan, NIDRR seeks to: (1) improve the quality and utility of disability and

rehabilitation research; (2) foster an exchange of research findings, expertise, and other information to advance knowledge and understanding of the needs of individuals with disabilities and their family members, including those from among traditionally underserved populations; (3) determine effective practices, programs, and policies to improve community living and participation, employment, and health and function outcomes for individuals with disabilities of all ages; (4) identify research gaps and areas for promising research investments; (5) identify and promote effective mechanisms for integrating research and practice; and (6) disseminate research findings to all major stakeholder groups, including individuals with disabilities and their families in formats that are appropriate and meaningful to them.

This notice proposes one priority that NIDRR intends to use for one or more competitions in FY 2014 and possibly in later years. NIDRR is under no obligation to make an award under this priority. The decision to make an award will be based on the quality of applications received and available funding. NIDRR may publish additional priorities, as needed.

Invitation to Comment: We invite you to submit comments regarding this proposed priority. To ensure that your comments have maximum effect in developing the final priority, we urge you to identify clearly the specific topic that each comment addresses.

We invite you to assist us in complying with the specific requirements of Executive Orders 12866 and 13563 and their overall requirement of reducing regulatory burden that might result from this proposed priority. Please let us know of any further ways we could reduce potential costs or increase potential benefits while preserving the effective and efficient administration of the program.

During and after the comment period, you may inspect all public comments about this proposed priority in room 5142, 550 12th Street, SW., PCP, Washington, DC, between the hours of 8:30 a.m. and 4:00 p.m., Washington, DC time, Monday through Friday of each week except Federal holidays.

Assistance to Individuals with Disabilities in Reviewing the Rulemaking Record: On request we will provide an appropriate accommodation or auxiliary aid to an individual with a disability who needs assistance to review the comments or other documents in the public rulemaking record for this notice. If you want to schedule an appointment

for this type of accommodation or auxiliary aid, please contact the person listed under FOR FURTHER INFORMATION CONTACT.

Purpose of Program: The purpose of the Disability and Rehabilitation Research Projects and Centers Program is to plan and conduct research, demonstration projects, training, and related activities, including international activities, to develop methods, procedures, and rehabilitation technology that maximize the full inclusion and integration into society, employment, independent living, family support, and economic and social self-sufficiency of individuals with disabilities, especially individuals with the most severe disabilities. The Program is also intended to improve the effectiveness of services authorized under the Rehabilitation Act of 1973, as amended (Rehabilitation Act).

#### Rehabilitation Engineering Research Centers

The purpose of the RERCs, which are funded through the Disability and Rehabilitation Research Projects and Centers Program, is to achieve the goals of, and improve the effectiveness of, services authorized under the Rehabilitation Act through well-designed research, training, technical assistance, and dissemination

activities in important topical areas as specified by NIDRR with guidance from its Rehabilitation Research Advisory Council. These activities are designed to benefit rehabilitation service providers, individuals with disabilities, family members, policymakers, and other research stakeholders. Additional information on the RERC program can be found at:

<http://www2.ed.gov/programs/rerc/index.html#types>.

Program Authority: 29 U.S.C. 762(g) and 764(b)(3).

Applicable Program Regulations: 34 CFR part 350.

PROPOSED PRIORITY:

This notice contains one proposed priority.

RERC on Technologies to Enhance Independence in Daily Living for Adults with Cognitive Impairments.

Background:

Estimates from the most recent U.S. Census data indicate that in 2011 over 12 million Americans of all ages with functional impairments relied on personal assistance and other long-term services and supports (LTSS) in their home and community or in an institution, to perform daily activities to maintain their quality of living and, when possible, their independence (Brault, 2012; Kay, Harrington, and LaPlante, 2010). The need for LTSS is

projected to increase dramatically in the coming decades to a high of 27 million in 2050 (Kay, Harrington, and LaPlante, 2010). This increase will be driven primarily by the aging of the population and the higher prevalence of disability among older individuals, but also by the increased longevity experienced by individuals with early onset disabilities (Field & Jette, 2007).

Associated with the increasing prevalence of disability generally is an increasing prevalence of cognitive impairments. Cognitive impairments refer to significant difficulties in remembering, concentrating, or making decisions resulting from physical, mental, or emotional conditions (U.S. Census Bureau, 2012). The 2011 ACS estimated that there were about 14.0 million individuals with cognitive impairments in the U.S. population. The prevalence of cognitive impairments among individuals who are 65 years and older is about 2.3 times the prevalence among individuals under 65 years; so, like disability in general, the prevalence of cognitive impairments is expected to increase substantially in future decades.

The increasing number of Americans with cognitive impairments will present a number of pressing challenges.



Chief among these will be the need to promote and sustain independence in daily living and to find less intrusive and more cost-effective ways of delivering the services and supports people need to remain as independent as possible.

Today, about 10-11 million Americans, predominately adults, with physical, sensory, psychiatric, and cognitive impairments rely on personal assistance and other LTSS to perform daily activities in their home, community, and workplace (Kaye, Harrington & LaPlante, 2010). LTSS refers to a range of person-to-person assistance received by people with disabilities that allows them to carry out their tasks of daily living and live as independently as possible. In 2011, expenditures from Federal and State Medicaid for LTSS to assist individuals with disabilities were estimated at \$211 billion (O'Shaughnessy, 2013).

Given the projected growth in the number of Americans with disabilities, the Nation has a substantial financial, as well as social interest, in developing technologies that enhance independence in daily living and can reduce the reliance on costly traditional LTSS (Commission on LTC, 2013). Particularly, in the area of support for adults with cognitive impairments, there is substantial potential for technologies to provide assistance that otherwise would

need to be provided by human support providers (IOM, 2013; LeadingAge CAST, 2011; NCD, 2011).

Technology-based alternatives to direct services and supports for daily living include assistive and smart technologies, such as cueing, and prompting or coaching devices, home and community monitoring systems, community wayfinding applications for hand-held devices, socially assistive robotics, smart environments, workplace supports, computer and Web-based teaching programs, tele-supports, technology-based care, service coordination systems, and many other applications of existing technologies (IOM, 2013; LeadingAge CAST, 2011; NCD, 2011).

The need for assistance for individuals with cognitive impairments to sustain independence in daily activities in the home, community, and workplace will expand greatly in coming decades due to the aging of the population. At the same time, fewer family caregivers will be able to care for family members with disabilities for a number of reasons, such as limitations due to their own aging and national declines in savings rates, retirement asset accumulation, and private insurance purchase. The decline in assistance from family caregivers will result in increased pressure on Medicaid programs.

Advances in science and engineering and the increased availability of new and emerging technologies, applications of existing technologies to new circumstances, and ever-improving information technology infrastructures offer promise in responding to the challenges of assisting the increasing number of people with cognitive impairments to maintain independence in daily living (IOM, 2013). Technology-based alternatives represent substantial opportunities to support independence and quality of life for adults with cognitive impairments in ways that are both liberating and cost-effective and that advance the widely endorsed goal of maintaining community living for individuals with disabilities and older adults (U.S. DHHS Community Living Initiative, 2010).

References:

Brault, Matthew W., "Americans With Disabilities: 2010," *Current Population Reports*, Pg. 70-131, U.S. Census Bureau, Washington, DC, 2012.

Commission on Long-Term Care: Report to Congress. (September 30, 2013). Final Report  
<http://www.chhs.ca.gov/OLMDOC/Agenda%20Item%206-%20Commission%20on%20Long-Term%20Care-%20Final%20Report%209-26-13.pdf>.

Field, M., & Jette, A. (Eds.) (2007). The future of disability in America. Washington, DC: The National Academies Press.

Kaye, H.S., Harrington, C., LaPlante. M.P. (2010). Long-Term Care: Who Gets It, Who Provides It, Who Pays, And How Much? doi: 10.1377/hlthaff.2009.0535 HEALTH AFFAIRS 29, NO. 1: 11-21.

IOM (Institute of Medicine). (2013). Fostering Independence, participation, and healthy aging through technology: workshop summary. Washington. DC. The National Academies (Free access available at: [http://books.nap.edu/openbook.php?record\\_id=18332](http://books.nap.edu/openbook.php?record_id=18332)).

LeadingAge CAST. (2011). Preparing for the future: Developing technology-enabled long-term services and supports for a new population of older adults. Washington, DC: LeadingAge ([www.leadingage.org/uploadedFiles/Content/About/CAST/Resources/Preparing\\_for\\_the\\_Future\\_Case\\_Studies.pdf](http://www.leadingage.org/uploadedFiles/Content/About/CAST/Resources/Preparing_for_the_Future_Case_Studies.pdf)).

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O'Shaughnessy, C. (2013). National spending for Long-term Services and supports (LTSS), 2011. Washington, DC: The George Washington University, National Health Policy Forum ([www.nhpf.org/uploads/announcements/Basics\\_LTSS\\_02-01-13.pdf](http://www.nhpf.org/uploads/announcements/Basics_LTSS_02-01-13.pdf)).

U.S. Census Bureau (2013). Disability characteristics: 2010-2012 American Community Survey 3-year estimates. Washington, DC: Author ([http://factfinder2.census.gov/faces/tableservices/jsf/pages/productview.xhtml?pid=ACS\\_12\\_3YR\\_S1810&proType=table](http://factfinder2.census.gov/faces/tableservices/jsf/pages/productview.xhtml?pid=ACS_12_3YR_S1810&proType=table)).

U.S Census Bureau (2012). Disability-American Community Survey. Washington, DC: Author ([www.census.gov/people/disability/methodology/acs.html](http://www.census.gov/people/disability/methodology/acs.html)).

U.S. Department of Health and Human Services (DHHS). Community Living Initiative. (May 20, 2010). Centers for Medicare & Medicaid (<http://downloads.cms.gov/cmsgov/archived-downloads/SMDL/downloads/SMD10008.pdf>).

Proposed Priority:

The Assistant Secretary for Special Education and Rehabilitative Services proposes the following priority for a Rehabilitation Engineering Research Center (RERC) on Technologies to Enhance Independence in Daily Living for

Adults with Cognitive Impairment. This RERC must focus on innovative technological solutions, new knowledge, and implementation strategies that enhance the independence and self-management of adults with cognitive impairment.

Under this priority, the RERC must research, develop, and evaluate new technologies, or adapt and evaluate existing technologies, to enhance the ability of adults with cognitive impairment to perform daily activities of their choice in the home, community, or workplace.

Technologies developed or adapted must be designed for commercialization as consumer products or for integration into rehabilitation practice or relevant service delivery systems. Research and development topics under this priority may include, but are not limited to: monitoring and prompting technologies or other information or communication aids; assistive technologies, including socially assistive robotics; mobile and wearable technologies; virtual reality; and care coordination or tele-health, tele-rehabilitation and other tele-support systems to facilitate improved activities of daily living.

In responding to this priority, applicants must specify the target populations or subgroups of adults with cognitive impairments that they intend to focus on and

identify the setting or settings for which they intend to develop technologies: home, community, or workplace. Applicants must also limit the number of research and development projects to a maximum of eight, and restrict the range of different types of technologies to what is manageable with available resources.

Under this priority, the RERC must be designed to contribute to the following outcomes:

(a) Increased technical and scientific knowledge relevant to technologies for increasing independence in daily living for adults with cognitive impairments. The RERC must contribute to this outcome by establishing a rigorous research and development plan that is balanced between technology development or adaption and technology evaluation and incorporates needs assessment, usability testing, and intervention development or efficacy studies, as appropriate. The research and development plan must be designed to build a base of evidence for assessing the usability, accessibility, acceptance, utility, and cost-benefit of technologies intended to improve independence in daily activities for adults with cognitive impairment in the home, community, or workplace settings. The RERC must contribute to this outcome by:

(i) Building a transdisciplinary team of collaborators from relevant disciplines, such as: rehabilitation and bio-engineering, computer science, human factors specialists, cognitive and behavioral scientists, clinicians and other relevant providers;

(ii) Conducting research and research syntheses or secondary analysis of existing data to evaluate user needs and specify the accessibility, acceptance, and human factors design features that will need to be built into the technology solutions developed and evaluated by the RERC to accommodate the cognitive impairments and preferences of the target population;

(iii) Conducting rigorous usability testing in the settings in which the technology will be used;

(iv) Developing and prioritizing a list of evaluation topics that, when addressed, will lead to research-based information on the utility or efficacy of technology solutions developed by the RERC; and

(v) Involving key stakeholders in the research and research planning activities to maximize the relevance and usefulness of the research products being developed. Stakeholders can include, but are not limited to, individuals with disabilities and their families; national,



State, or local-level policymakers, administrators, or service providers; and industry representatives.

(b) Improved usability and effectiveness of technologies, products, devices, systems, performance guidelines, and assessment tools through systematic development or adaptation, testing, and evaluation of innovations. In developing the technologies under this priority the RERC must:

(i) Incorporate user-centered designed strategies and consider the context in which the technology product, device, or system will be used;

(ii) Emphasize the principles of universal design and, as appropriate, conform to human factors standards, such as reliability, safety, and simplicity; accessibility and acceptability to users; protective of users' privacy preferences; intuitive user interfaces; feedback in meaningful sensory modalities; and appropriateness to diverse populations;

(iii) Incorporate ongoing training opportunities or user supports into the design of the technology or into the practice settings or delivery systems in which the technology will be integrated; and

(iv) Ensure that the technologies are interoperable within existing rehabilitation systems or home or mobile technologies and that they communicate with existing information technology systems, as appropriate.

(c) Improved research capacity areas that will contribute to enhancing the ability of adults with cognitive impairment to perform daily activities. The RERC must contribute to this outcome by collaborating with the relevant institutions of higher education, professional associations, clinicians and service providers, and other researchers or educators, as appropriate.

(d) Improved awareness and understanding of cutting-edge developments and promising technology solutions that will contribute to enhancing the ability of adults with cognitive impairment to perform daily activities. The RERC must contribute to this outcome by identifying and communicating with relevant stakeholders, including NIDRR, individuals with disabilities and their representatives, disability organizations, service providers, professional journals, manufacturers, and other interested parties regarding trends and evolving product concepts related to its designated priority research area.

(e) Increased impact of research and development activities carried out under this priority area. The RERC must contribute to this outcome by:

(i) Providing technical assistance to relevant public and private organizations, individuals with disabilities and their families, LTSS providers, and employers on policies, guidelines, and standards; and

(ii) Establishing or contributing to an existing program or service that provides objective information and technical and consumer reviews about technologies of promise to support independence in daily living for adults with cognitive impairments.

(f) Increased transfer of RERC-developed technologies to the marketplace for widespread testing and use by developing and implementing a plan to ensure that technologies developed by the RERC are made available to the public or to service delivery systems that serve the public. This technology transfer plan must be developed in the first year of the project period in consultation with the NIDRR-funded Center on Knowledge Translation for Technology Transfer.

Types of Priorities:

When inviting applications for a competition using one or more priorities, we designate the type of each priority as absolute, competitive preference, or invitational through a notice in the Federal Register. The effect of each type of priority follows:

Absolute priority: Under an absolute priority, we consider only applications that meet the priority (34 CFR 75.105(c)(3)).

Competitive preference priority: Under a competitive preference priority, we give competitive preference to an application by (1) awarding additional points, depending on the extent to which the application meets the priority (34 CFR 75.105(c)(2)(i)); or (2) selecting an application that meets the priority over an application of comparable merit that does not meet the priority (34 CFR 75.105(c)(2)(ii)).

Invitational priority: Under an invitational priority, we are particularly interested in applications that meet the priority. However, we do not give an application that meets the priority a preference over other applications (34 CFR 75.105(c)(1)).

Final Priority:

We will announce the final priority in a notice in the Federal Register. We will determine the final priority

after considering responses to this notice and other information available to the Department. This notice does not preclude us from proposing additional priorities, requirements, definitions, or selection criteria, subject to meeting applicable rulemaking requirements.

Note: This notice does not solicit applications. In any year in which we choose to use this priority, we invite applications through a notice in the Federal Register.

#### Executive Orders 12866 and 13563

#### Regulatory Impact Analysis

Under Executive Order 12866, the Secretary must determine whether this regulatory action is "significant" and, therefore, subject to the requirements of the Executive order and subject to review by the Office of Management and Budget (OMB). Section 3(f) of Executive Order 12866 defines a "significant regulatory action" as an action likely to result in a rule that may--

(1) Have an annual effect on the economy of \$100 million or more, or adversely affect a sector of the economy, productivity, competition, jobs, the environment, public health or safety, or State, local, or tribal governments or communities in a material way (also referred to as an "economically significant" rule);

(2) Create serious inconsistency or otherwise interfere with an action taken or planned by another agency;

(3) Materially alter the budgetary impacts of entitlement grants, user fees, or loan programs or the rights and obligations of recipients thereof; or

(4) Raise novel legal or policy issues arising out of legal mandates, the President's priorities, or the principles stated in the Executive order.

This proposed regulatory action is not a significant regulatory action subject to review by OMB under section 3(f) of Executive Order 12866.

We have also reviewed this regulatory action under Executive Order 13563, which supplements and explicitly reaffirms the principles, structures, and definitions governing regulatory review established in Executive Order 12866. To the extent permitted by law, Executive Order 13563 requires that an agency--

(1) Propose or adopt regulations only upon a reasoned determination that their benefits justify their costs (recognizing that some benefits and costs are difficult to quantify);

(2) Tailor its regulations to impose the least burden on society, consistent with obtaining regulatory objectives and taking into account--among other things and to the extent practicable--the costs of cumulative regulations;

(3) In choosing among alternative regulatory approaches, select those approaches that maximize net benefits (including potential economic, environmental, public health and safety, and other advantages; distributive impacts; and equity);

(4) To the extent feasible, specify performance objectives, rather than the behavior or manner of compliance a regulated entity must adopt; and

(5) Identify and assess available alternatives to direct regulation, including economic incentives--such as user fees or marketable permits--to encourage the desired behavior, or provide information that enables the public to make choices.

Executive Order 13563 also requires an agency "to use the best available techniques to quantify anticipated present and future benefits and costs as accurately as possible." The Office of Information and Regulatory Affairs of OMB has emphasized that these techniques may include "identifying changing future compliance costs that

might result from technological innovation or anticipated behavioral changes."

We are issuing this proposed priority only upon a reasoned determination that its benefits would justify its costs. In choosing among alternative regulatory approaches, we selected those approaches that would maximize net benefits. Based on the analysis that follows, the Department believes that this proposed priority is consistent with the principles in Executive Order 13563.

We also have determined that this regulatory action would not unduly interfere with State, local, and tribal governments in the exercise of their governmental functions.

In accordance with both Executive orders, the Department has assessed the potential costs and benefits, both quantitative and qualitative, of this regulatory action. The potential costs are those resulting from statutory requirements and those we have determined as necessary for administering the Department's programs and activities.

The benefits of the Rehabilitation Engineering Research Centers Program have been well established over the years. Projects similar to the RERCs have been



completed successfully, and the proposed priority will generate new knowledge through research. The new RERCs will generate, disseminate, and promote the use of new information that would improve outcomes for individuals with disabilities in the areas of community living and participation, employment, and health and function.

Intergovernmental Review: This program is not subject to Executive Order 12372 and the regulations in 34 CFR part 79.

Accessible Format: Individuals with disabilities can obtain this document in an accessible format (e.g., braille, large print, audiotape, or compact disc) by contacting the Grants and Contracts Services Team, U.S. Department of Education, 400 Maryland Avenue, SW., room 5075, PCP, Washington, DC 20202-2550. Telephone: (202) 245-7363. If you use a TDD or TTY, call the FRS, toll free, at 1-800-877-8339.

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Dated: March 27, 2014

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Michael K. Yudin,  
Acting Assistant  
Secretary for  
Special Education and  
Rehabilitative Services.

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